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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/719,881

Filing Date: November 21, 2003

Appellant(s): MATTHIJS ET AL.

William M. Lee, Jr.
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 2 March 2010 appealing from the Office action mailed 30 September 2009.

(1) Real Party in Interest

This application is assigned to Barco N.V., who is the real party in interest.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

JP 59-126967	AIDA	7-1984
US 6,529,618	OHARA ET AL.	3-2003
US 2004/0164939	JOHNSON ET AL.	8-2004

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 16-19, 22-28 and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aida (JP 59-126967) in view of Ohara et al. (US 6,529,618).

Regarding claim 16, Aida discloses a method comprising:

obtaining information on the presence and the location of defective pixels in the display (Figure 3 and page 5, lines 19-22 explain that measurements are taken of the pixels, and page 5, lines 22 to page 6, line 5 explain that the measurements are compared to determine if there is a defect or not and then the results are stored in a storage section 4. The storage section also receives the coordinate information from

the x-sequence control 8 and the y-sequence control 9, i.e. location of the pixel.), and on the basis of this information,

emphasize or warn for the presence of pixels corresponding to said defective cells (Figure 3 shows display section 14. Page 7, lines 3-5 explain that the judgment results are displayed on the display section 14 at the position that corresponds to the pixel measured at that time. Thus an image of the LED matrix is made on the monitor at the location of the defective pixels will be made so as to warn and indicate these defects to a user.).

Aida fail to teach that the method is for avoiding misinterpretation of an image displayed on a matrix display due to defective cells in the matrix display, where on the basis of the information, modulating the operation of said matrix display when displaying said image on said matrix display device and adapting in this way the image content of the pixels of said image, corresponding to said defective cells or corresponding to pixels in the neighborhood of said defective cells so as to emphasize or warn for the presence of said defective cells on the actual display of said image.

Ohara et al. disclose a method for avoiding misinterpretation of an image displayed on a display due to defects, whereby the image comprises a plurality of pixels, the method comprising:

obtaining information on the presence and the location of the defects (Column 17, lines 33-40 and 57-64 explain that the location of the defects are obtained), and on the basis of this information,

modulating the operation of said display when displaying said image on said display and adapting in this way the image content of the pixels of said image, corresponding to said defects or corresponding pixels in the neighborhood of said defects so as to emphasize or warn for the presence of said defects on the actual display of said image (Figure 13 and 14 and column 19, lines 12-19 explain that the matrix display operation is changed to mark the display, i.e. emphasize/warn, for the presence of the defects.).

Therefore, it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to use the image misinterpretation method taught by Ohara et al. on a matrix display panel having defective pixels as taught by Aida in order to allow for medical doctors to read the photograph grasping the positions of the defective cells such that the misinterpretation of the medical image can be avoided (Ohara et al., column 21, lines 21-26).

Regarding claim 17, Aida and Ohara et al. disclose a method according to claim 16.

Ohara et al. also disclose wherein the information is obtained from data previously stored in a memory device (Figure 1 shows the defect information memory section 26).

Regarding claim 18, Aida and Ohara et al. disclose a method according to claim 17.

Ohara et al. also disclose the method comprising, while displaying the image on the display device, supplying information on defects to a user, based on the stored data (Figures 14A and 14B show that information about the defective cells is displayed while the image is displayed on the matrix display device.).

Regarding claim 19, Aida and Ohara et al. disclose a method according to claim 16.

Ohara et al. also disclose wherein, emphasizing or warning for the presence of at least one defect comprises visually marking the at least one defect on said matrix display device (Figures 13, 14A and 14B each show that the defective cells are visually marked to emphasize/warn for their presence.).

Regarding claim 22, Aida and Ohara et al. disclose a method according to claim 16.

Aida also discloses wherein the information on the presence of defective pixels is obtained by means of an image capturing device (Figure 2 shows optical sensor Op.).

Regarding claim 23, please refer to the rejection of claim 16, and furthermore Ohara et al. also disclose of a method for avoiding misinterpretation of a copy of an image displayed on a display device due to defects, whereby the copy of the image comprises a plurality of pixels (Figure 13, 14A and 14B) comprising adapting in said copy of said image, the image content of the pixels corresponding to said defects so as

to emphasize or warn for the presence of pixels corresponding to said defects (Figure 13, 14A and 14B all show the copy of the image taken that is displayed on the display device with the defects emphasized/warned for by using visual marking so as to avoid misinterpretation of the copy of the image taken.).

Furthermore, as also discussed in the rejection of claim 16, Aida also discloses of adapting the image content of the defective cells or of cells in the neighborhood of the defective cells so as to emphasize or warn for the presence in the copy of said image of pixels corresponding to said defective cells (Figure 3 shows display section 14. Page 7, lines 3-5 explain that the judgment results are displayed on the display section 14 at the position that corresponds to the pixel measured at that time. This means that in a copy of an image of the LED matrix display the location of the defective pixels will be made so as to warn the user about the defects.).

Regarding claim 24, Aida and Ohara et al. disclose the method according to claim 23.

Aida also discloses wherein, the copy is a hard copy or an electronic copy (Figure 3 shows that the “copy” is displayed on the display section 14, meaning that it is an electronic copy.).

Regarding claim 25, this claim is rejected under the same rationale as claim 16.

Regarding claim 26, this claim is rejected under the same rationale as claim 17.

Regarding claim 27, this claim is rejected under the same rationale as claim 18.

Regarding claim 28, this claim is rejected under the same rationale as claim 19.

Regarding claim 31, this claim is rejected under the same rationale as claim 23.

Regarding claim 32, this claim is rejected under the same rationale as claim 16.

4. Claims 20-21 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aida (JP 59-126967) in view of Ohara et al. (US 6,529,618) and further in view of Johnson et al. (US 2004/0164939).

Regarding claim 20, Aida and Ohara et al. disclose a method according to claim 16.

Aida and Ohara et al. fail to teach that that the method further comprises showing the displayed image so that defective pixels are not located in a region of interest.

Johnson et al. disclose a method comprising showing a displayed image so that defective pixels are not located in a region of interest (Paragraph [0027] explains that if only part of the image is active that the active part avoids the weak diode, i.e. the image is shifted out of the region where the defect is.).

Therefore, it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to show the displayed image so that the defective pixels would not be located in a region of interest as taught by Johnson et al. with the method taught by the combination of Aida and Ohara et al. in order to allow for the proper viewing of the image without any defects in the image being viewable.

Regarding claim 21, Aida and Ohara et al. disclose a method according to claim 16.

Aida and Ohara et al. fail to teach that that the method further comprises shifting the displayed image so that a defective pixel is located in a flat image area.

Johnson et al. disclose a method comprising shifting a displayed image so that a defective pixel is located in a flat image area (Paragraph [0027] explains that if only part of the image is active that the active part avoids the weak diode, i.e. the image is shifted out of the region where the defect is, and since the display is flat, this will be a flat image area.).

Therefore, it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to shift the displayed image so that the defective pixels would be located in a flat image area as taught by Johnson et al. with the method taught by the combination of Aida and Ohara et al. in order to allow for the proper viewing of the image without any defects in the image being viewable.

Regarding claim 29, this claim is rejected under the same rationale as claim 20.

Regarding claim 30, this claim is rejected under the same rationale as claim 21.

(10) Response to Argument

A. Ground I (Claims 16-19, 22-28 and 31-32)

On pages 5-9 of the Appeal Brief the Applicant argues the rejection of independent claims 16 and 25 under 35 U.S.C. 103(a) using the Aida and Ohara references.

The Applicant begins on page 5 by reciting the claim language and then reciting what the examiner states in the rejection regarding the Aida reference. The Applicant continues on page 6 by stating that the statement in the office action is confusing because while the Applicant agrees that Aida discloses a method for obtaining defective pixels in a display, but not “the” display, and that there is no disclosure of a particular emphasizing or warning for the presence of defective cells because “display section 14 is displaying the judgment results f, which results correspond to the output of a comparison section 3, which output represents the acceptance or rejection of a measurement (Aida, from page 6, last line to page 7, line 5)” and that it is clear that Aida discloses only the feature “obtaining information on the presence and the location of the defective cells in said matrix display device.” The Examiner respectfully disagrees. As recited in the rejection, Aida does emphasize or warn for the presence of defective cells

that are found in a matrix display (as admitted by Applicant in their argument), however, Aida just fails to teach that this emphasizing or warning is done on the same matrix display to which the defects are found, but rather displays them on a separate display.

Thus, the Applicant continues on page 6 by reciting more of the office action (the part reciting what Aida fails to teach), and then concluding that the statement implicitly confirms the Applicant's above conclusion because only the feature "obtaining information...matrix display device" is not referred to as "fail to teach." The examiner respectfully disagrees because, as explained above, Aida actually teaches part of the limitation of emphasizing or warning for the presence of pixels corresponding to said defective cells on the basis of the information obtained, Aida just fails alone to teach the full limitation in that this emphasizing or warning is done on the actual display device.

Next on page 7 of the Appeal Brief the Applicant recites what the examiner states in the rejection regarding the Ohara reference. The Applicant then states that they disagree, because Ohara relates to a radiation image and continues to explain the Ohara reference. The Applicant then concludes on page 8 that Ohara fails to teach a display device in which the image content of the pixels of an image is adapted in order to emphasize or to warn for the presence of defective cells. The Examiner notes that nowhere in the rejection did the Examiner state that Ohara discloses a display device in which the image content of the pixels of an image is adapted in order to emphasize or to warn for the presence of defective cells. Instead Aida was used to teach a display device in which defective cells are found and then emphasized or warned for, while Ohara was used to teach of providing information of defects and using this information

to modulate the operation of the display when displaying the image and adapting the image content to emphasize or warn for the presence of said defects on the actual display of said image. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The Applicant then continues on page 8 by arguing the factual inquiries set forth in Graham v. John Deere Co. and then stating inquiry 2 is never performed in the office action and then the Applicant recites the differences between Ohara and independent claim 16. The Applicant then recites that the first Graham inquiry was not performed correctly and that the second is not performed at all and thus the conclusion of obviousness is not correct. The Examiner respectfully disagrees. The Graham inquires are merely set for establishing a background for determining obviousness. With regards to inquiry 1, the office action clearly determined the scope and contents of the prior art, since Aida relates to a display device in which defective cells are determined and Ohara relates to a method of misinterpretation of an image. With regards to inquiry 2, the examiner clearly determined the differences between the prior art and the claims at issue as illustrated by the “fails to state” in the rejection. The examiner notes that Aida was used as the primary reference while Ohara was used as the secondary reference, as such Ohara was only used for its teachings for curing the deficiencies of Aida. The examiner notes that throughout the Applicant’s argument that they have only argued the reference individually, whereas a combination of the references was used to

teach the claimed limitations. Once again the Applicant is reminded that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

On page 9 of the Appeal Brief the applicant then states “Only to be complete: in claim 16, the positions of the defective cells (of the display device) are represented in the displayed image (by adapting the image signals) while in Ohara, the position of the defective pixels (of another item: image sensing panel) are displayed in a particular display, without any processing of the image signals.” The examiner respectfully disagrees because in order to show anything on a display the operation of the display must be modulated and adapted in order for the pixels to collectively display an image, and as such any displaying in Ohara will require processing of image signals.

Thus, the combination of Aida and Ohara teaches all of the claimed limitations, and therefore claims 16 and 25 are not novel and are obvious in view of the prior art and the rejection should be maintained.

On pages 9-11 of the Appeal Brief the Applicant argues the rejection of independent claims 23 and 31 under 35 U.S.C. 103(a) using the Aida and Ohara references.

The Applicant begins on page 9 by reciting the claim language and then reciting what the examiner states in the rejection regarding the Ohara reference with respect to the “copy of an image”. The Applicant continues by arguing that the Figures are simply

representation as seen by a draftsman (or by the inventor) displayed on different screen but no copies of a real screen image. The examiner respectfully disagrees. The claim language is broad and does not define what a "copy" of the image is, but rather just that the copy of the image comprises a plurality of pixels. As such, the Examiner can consider what is displayed on a display device to be a "copy" on the image.

Next, on page 10 of the Appeal Brief, the Applicant recites what the Examiner recites in the rejection with respect to the Aida reference and the "copy" feature. The Applicant then argues that the information on the display section is considered to be a copy of an image displayed on the LED display but that Aida does not disclose of sending any image data, and thus it is impossible to have a copy of a non-existing image on the display section. The Examiner respectfully disagrees. The Applicant is under the impression that an "image" as recited in the claims must show pictures of objects, etc. however, in reality, anyone of ordinary skill in the art would realize that an all black or all white display is still an "image", in fact, as long as the LEDs are driven then there is an "image" being displayed, thus driving each LED to emit light in Aida is still causing an "image" to be displayed, and then physically marking the defective cells on the other display device is emphasizing/warning for the presence of the defective cells in a "copy" of the "image" since the claims do not define anything about what the "copy" is or what the "image" is.

Thus, both Aida and Ohara each disclose of providing a "copy" of the image, and therefore the combination of the references also teaches the "copy" feature, and therefore the rejection of claims 23 and 31 should be maintained.

On page 11 of the Appeal Brief the Applicant argues the rejection of independent claim 32 under 35 U.S.C. 103(a) using the Aida and Ohara references.

On page 11 the Applicant recites claim 32, then notes that claim 32 is a control unit used with either claim 25 or claim 31, and that since claim 32 contains an alternative, meeting one of the alternatives is sufficient for rejection the entire claim. Thus, as explained above, since the combination of Aida and Ohara discloses both the alternatives, this rejection should also be maintained.

On pages 11-14 of the Appeal Brief the Applicant responds to the Examiner's arguments presented in the Final Office Action.

First, on page 12, the Applicant recites the Examiner's first argument with respect to claim 16 and a "single combined image" and then continues to recite the limitation of claim 16, stating that by adapting the image content of some of the pixels, a new image is created comprising partly the original image and partly new information, and thus in other words there is a single combined image. The Examiner would like to once again note that none of the words used by the Applicant in this argument are presented in the claims as limitations, but rather is just the Applicant explaining their invention and how it is different from the prior art, whereas the claims do not recite this feature and thus it is not required.

Next, on page 13, the Applicant then recites the Examiner's second argument with respect to claim 16 and the references used, then recites Ohara is not only not

teaching a matrix display but Ohara does not teach of avoiding misinterpretation of an image displayed on a matrix display due to defective cells of that matrix display, and then explains the Ohara reference and their invention. It appears the Applicant is still focusing on only attacking the references individually, which was the point to this argument in the Office Action. Ohara was not used to teach the avoiding misinterpretation due to defective cells of that matrix display, but rather the combination was used to teach the limitations of the claims.

Last, on page 14, the Applicant then recites the Examiner's third argument with respect to remaining claims and the "copy" feature. The Applicant then reemphasizes that there is no image in Aida, and even if Aida discloses an all white display, if an LED is defective then this will be displayed on the display of Aida and thus the images will be different. By this argument, the Applicant doesn't actually have a "copy" of the image because they are emphasizing or warning for the presence of defects in the copy and thus the copy will be different than what is displayed on the actual display device. From the claims the "copy" must be different than the actual image on the display since it is being adapted to emphasize or warn for the presence. Thus from the above arguments presented, Aida still teaches this feature, as does Ohara, and thus the combination also teaches the feature. Therefore, the rejections should be maintained.

On page 14 of the Appeal Brief the Applicant argues that since claims 17, 18, 22, 24 and 26-28 are dependent claims that they are allowable by virtue of their

dependence on allowable claims, however, as explained above the independent claims are not patentable, and thus claims 17, 18, 22, 24 and 26-28 are also not patentable.

B. Ground 2 (Claims 20-21 and 29-30)

On page 15 of the Appeal Brief the Applicant argues that since claims 20-21 and 29-30 depend from claims 16 and 25 respectively, that these claims should also be allowable, however, as explained above, since claims 16 and 25 are not patentable then claims 20-21 and 29-30 are also not patentable.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

(12) Conclusion

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Stephen G Sherman/

Examiner, Art Unit 2629

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